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ASTM F2007-2006: Standard Practice for Design, Manufacture, and Operation of Concession Go-Karts and Facilities as required by:
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Standard Practice for Classification, Design, Manufacture, and Operation of Concession Go-Karts and Facilities[1]

This standard is issued under the fixed designation F 2007; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice applies to the design, manufacture, and operation of concession go-karts and their associated operating facilities where public or member use is offered with a use fee. This practice defines classifications for the various vehicles offered for public use to replicate motor sports competitive activities.

1.2 This standard does not apply to vehicles or facilities specifically offered for racing (race karts) or used for general purpose by private owners (fun karts) other than owners of concession go-kart facilities.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:* [2]

F 770 Practice for Operation Procedures for Amusement Rides and Devices

F 1159 Practice for Design and Manufacture of Patron Directed, Artificial Climbing Walls, Dry Slide, Coin Operated and Purposeful Water Immersion Amusement Rides and Devices and Air-Supported Structures

F 1193 Practice for Amusement Ride and Device Manufacturer Quality Assurance Program and Manufacturing Requirements

2.2 *SAE Standard:*[3]

J1241–1978 Fuel and Lubricant Tanks for Motorcycles

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *concession go-kart, n*—an amusement ride or device, which meets all of the following specifications: the device is a single vehicle, unattached to other vehicles or a common frame system, which is powered without connection to a common energy source, which is driver controlled with respect to acceleration, speed, braking, and steering, which operates within the containment system of a defined track, and which simulates competitive motor sports, which is used by members of the general public for a fee. A concession go-kart has a maximum capacity of two persons and no cargo capacity.

3.1.1.1 *Discussion*—This definition specifically excludes similar go-kart devices that are intended for use as competitive (racing) karts or similar go-kart devices intended for ownership and use by private owners. This definition specifically excludes devices, such as electronically or rail guided amusement rides and bumper cars or other similar amusement motor sports devices that operate under circumstances where there is no defined direction of travel. Classifications of concession go-karts shall be based upon speed measured on a flat and level track surface.

3.1.1.2 *Class 1 concession go-kart, n*—a four-wheeled amusement ride or device controlled by the driver, without suspension, with a maximum capacity of one driver and one passenger. Speeds for a Class 1 concession go-kart shall not exceed 10 mph.

3.1.1.3 *Class 2 concession go-kart, n*—a four-wheeled amusement ride or device controlled by the driver, without suspension, with a maximum capacity of one driver and one passenger. Speeds for a Class 2 concession go-kart shall not exceed 22 mph.

3.1.1.4 *Class 3 concession go-kart, n*—a four-wheeled amusement ride or device controlled by the driver, without suspension, with a maximum capacity of one driver and one passenger. Speeds for a Class 3 concession go-kart shall not exceed 30 mph.

3.1.1.5 *Class 4 concession go-kart, n*—a four-wheeled amusement ride or device controlled by the driver, with or without suspension, with a maximum capacity of one driver and one passenger. Speeds for a Class 4 concession go-kart shall not exceed 50 mph.

3.1.1.6 *Class 5 concession go-kart, n*—a four-wheeled amusement ride or device controlled by the driver, with or without suspension, and not designed to race competitively

[1] This practice is under the jurisdiction of ASTM Committee F24 on Amusement Rides and Devices and is the direct responsibility of Subcommittee F24.60 on Special Rides/Attractions.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from Society of Automotive Engineers (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001.

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against other karts, that is, race for time only or "against the clock," with a maximum capacity of one driver and one passenger. Speeds for a Class 5 concession go-kart shall not exceed 50 mph.

3.1.2 *concession go-kart attendant, n*—the person or persons whose duties may include but are not limited to the instruction, dispatch, and limitation of ride duration of persons driving concession go-karts.

3.1.3 *containment system, n*—a device installed on the concession go-kart track, which defines the boundaries of the track, and whose primary purpose is to contain the vehicles within the defined boundary.

3.1.4 *driver, n*—the person who manipulates and controls the direction of travel, braking, and speed of a concession go-kart.

3.1.5 *fun kart, n*—a motorized vehicle with four wheels, sold commercially as consumer goods and intended for private personal recreational use by the consumers for off-road use on suitable terrain, as recommended by the manufacturer.

3.1.6 *owner, n*—the person, persons, partnership, company, group, or corporate entity, or agent of a person, who owns, controls, or has the duty to direct or control the operation of a concession go-kart track.

3.1.7 *passenger, n*—the person who is transported aboard a concession go-kart as a passenger without having control of the direction of travel, braking, and speed of the go-kart.

3.1.8 *pit, n*—a defined station for the purpose of loading and unloading driver and passenger during the initiation and conclusion of the ride cycle.

3.1.9 *race kart, n*—go-karts designed for the sole purpose of racing on tracks, streets, or other areas of competition, and not to be used by the general public in an amusement facility setting.

3.1.10 *track, n*—a defined path for the operation of concession go-karts that is hard surfaced and fitted with a containment system to define the path of travel.

4. Significance and Use

4.1 This practice is intended to delineate information for the design, manufacture, and operation of concession go-karts and related track facilities, that are designed and manufactured after the publication of this practice.

5. Concession Go-Kart Design and Manufacture

5.1 Concession go-kart manufacturers shall identify or specify the classification as defined in Section 3 of the concession go-kart to the owner prior to or at the time of sale.

5.2 Concession go-karts shall be designed, constructed, or operated in such a manner that the wheels from one go-kart cannot engage or override the wheels of another go-kart operating under normal conditions.

5.3 Concession go-kart manufacturers shall provide specifications, and maintenance and repair instructions to the original purchaser in accordance with Practice F 1193 and shall include, but not be limited to, the following topics:

5.3.1 Brake adjustments and service;

5.3.2 Steering linkage adjustment and service;

5.3.3 Wheel alignment adjustment and service;

5.3.4 Tire inflation pressures;

5.3.5 Tire wear limits;

5.3.6 Wheel nut torque values;

5.3.7 Grade of all fasteners;

5.3.8 Torque value or tightening instruction on all fasteners;

5.3.9 Chassis lubrication points including recommended lubricants;

5.3.10 Drive system specifications and service instructions;

5.3.11 Frame inspection procedures;

5.3.12 Seat belt adjustment, installation, and inspection procedures;

5.3.13 Capacity by weight;

5.3.14 Maximum operating speeds;

5.3.15 Service and adjustment procedures for all components of the go-kart;

5.3.16 A phone number or fax number to be used by the track owner or concession go-kart attendant to secure maintenance or operating assistance from the manufacturer; and,

5.3.17 Daily, weekly, monthly, or other periodic minimum service and component checklists.

5.4 Concession go-kart fuel tanks, filler necks, and caps shall be designed and manufactured to meet or exceed the testing requirements of Section 3.2 of SAE J1241–1978.

5.4.1 Fuel tank, filler neck, and cap field testing procedures shall be specified by the concession go-kart manufacturer.

5.5 Concession go-kart fuel tanks shall be installed in such a manner to minimize the potential for rupture or damage in the event of collision with another go-kart, obstacle, or rollover.

5.6 Manufacturer shall clearly mark throttle and brake locations of concession go-karts in a visible position on the body or chassis of the go-kart, or by coloring the throttle green and the brake control red.

5.7 Manufacturer shall specify the maximum operating speed for concession go-karts.

5.7.1 Speed limitation devices shall be incorporated in concession go-karts, that is, throttle stops, pedal stops, governors, gearing, throttle linkage adjustors, etc., to limit speeds.

5.8 Manufacturer shall specify any driver and passenger requirements, which may include height, passenger placement, or any other appropriate requirements.

5.9 Concession go-karts shall be equipped with occupant compartment padding consistent with Section 6 of Practice F 1159.

5.10 Concession go-karts shall have protective covers or component placement for moving or heated components of the engine and drive train system, to inhibit driver or passenger from inadvertent contact with these components while seated in the intended position for operation and while properly restrained.

5.11 Concession go-karts shall have occupant seating and containment consistent with Section 6 of Practice F 1159.

5.12 Concession go-karts shall have a roll over protection system that supports the combined driver or passenger weight capacity, or both, as specified by the manufacturer, and the weight of the go-kart.

5.13 Manufacturer shall provide recommendations for the use, adjustment, and maintenance of restraint, protective, or other safety devices provided with or for their concession go-karts.

5.14 The concession go-kart braking system shall have sufficient braking capacity to override the power of the engine while at a standstill.

6. Concession Go-Kart Track Design and Construction

6.1 Concession go-kart tracks shall have a containment system, which meets or exceeds the recommendations of the manufacturers of the concession go-kart used on each specific track.

6.1.1 Tire containment systems, if used without a track side continuous band, shall consist of tires that are fastened securely to each other and anchored to prevent relocation.

6.1.2 When tires are used as support components for a continuous band containment system, the tires shall be placed with adequate horizontal separation to help prevent the tires from raising the band upon being impacted by a go-kart.

6.1.3 Tires used for a containment system on a concession go-kart track shall be free of rims or wheels. Tires used for other purposes, such as pit entry spinner tires, shall be mounted on rims/wheels, inflated, and the wheels shall be installed on a rigidly mounted spindle.

6.1.3.1 Spinner tires shall be inflated to a maximum pressure of 5 psi.

6.1.3.2 Spinner tire wheels shall be distinctly marked as "NO STEP."

6.1.4 Concession go-kart track bridges shall have a secondary containment system behind the primary containment system and on both the approach and egress of bridge. This containment system shall be adequate to retain a go-kart on the track or perimeter surface.

6.2 Concession go-kart track surfaces shall be free of vertical misalignment greater than ¾ in. within 1 in. horizontal distance and made of a material that cannot be moved or displaced by normal go-kart operation.

6.3 The concession go-kart track running surface shall not have intersections on the same horizontal plane for classes of concession go-karts 2, 3, 4, or 5, with the exception of the entrance and exit points of the pit area.

6.4 A perimeter fence shall be provided to the extent required by Practice F 1159. When provided it shall restrict unauthorized public access to the concession go-kart track.

6.5 Obstructions, which could be struck by go-karts during operations, on a concession go-kart track shall be protected by a material, which will reduce or minimize the impact.

6.6 Concession go-kart track pit areas shall protect any permanent obstructions by material that will reduce or minimize impact or by utilizing impact safety systems. Impact safety systems may include, but not be limited to, safety spinners, traffic guidance, or remote control devices.

6.7 Concession go-kart tracks operating at night shall have appropriate illumination to allow for visual observation of the entire track and pit areas by concession go-kart attendants and drivers.

6.8 A minimum of a 10 lb B.C.-rated fire extinguisher shall be accessible within a maximum of seventy feet of any point of the concession go-kart track in accordance with local, state, and federal regulations.

6.8.1 A minimum of a 10 lb B.C.-rated fire extinguisher shall be located in the concession go-kart track pit area and be easily accessible to concession go-kart attendants.

6.8.2 Fire extinguisher locations should be marked in accordance with local, state, and federal regulations.

6.8.3 Fire extinguishers permanently mounted in weather exposed locations shall be protected by an enclosure approved by local, state, and federal regulations.

6.8.4 Fueling areas at a concession go-kart track shall comply with local, state, and federal regulations.

6.9 Markings or signs indicating direction of concession go-kart travel and to identify pit lanes shall be provided in a manner that is clearly visible to concession go-kart drivers.

6.10 The entry and pit area of a concession go-kart track should include instruction and rules signs visible from the main entrance to the queue line and other appropriate locations to enable all patrons to read rules and procedures of safe track operation.

6.10.1 The instruction signage may include the following information:

6.10.1.1 Instructions concerning placement of hands on the steering wheel and feet inside the driver/passenger compartment of the go-kart at all times.

6.10.1.2 Height, or age restrictions, or both.

6.10.1.3 Instructions concerning securing long hair and loose clothing.

6.10.1.4 Restrictions regarding smoking in concession go-karts or in pit areas.

6.10.1.5 Instructions regarding proper starting and stopping operations.

6.10.1.6 Instructions regarding proper seating of drivers and passengers and the use of restraints.

6.10.1.7 Information on complying with verbal, or signaled instructions, or both, given by concession go-kart attendants.

6.10.1.8 Instructions concerning bumping or pushing with go-karts.

6.10.1.9 Information regarding the importance of following rules and instructions.

6.11 Warning signage should be posted at appropriate locations, which may include but not be limited to, the following messages:

6.11.1 Warnings concerning forces and actions that could aggravate physical conditions, that is, heart conditions, pregnancy, neck and back conditions, etc.

6.11.2 Drivers must have the abilities to operate their go-karts in a safe manner.

7. Concession Go-Kart Facility Operations

7.1 Safety training shall be provided for each concession go-kart attendant. This training shall include, but not be limited to, the following:

7.1.1 Instruction on concession go-kart operating procedures.

7.1.2 Instructions on specific duties of the assigned position.

7.1.3 Instructions on general safety procedures.

7.1.4 Instructions on emergency procedures.

7.1.5 Demonstration of the physical ride or device operation.

7.1.6 Supervised observation of the concession go-kart attendant's physical operation of the ride.

7.1.7 Additional instructions deemed necessary by the owner.

7.2 A written training outline/checklist shall be used in all training programs.

7.2.1 The training program records shall include, but not be limited to, the name of the instructor, date of training, and name of the employee.

7.3 Concession go-kart track employees shall receive training in fueling operations in accordance with all local, state, and federal fire codes.

7.4 The manufacturer of the concession go-karts shall provide the owner with a written inspection procedure to be delivered with the concession go-kart. The document shall outline the inspections as contained in Practice F 1193.

7.4.1 Owners of concession go-karts shall have an inspection program consistent with the inspections outlined in Practices F 770 and F 1193.

7.4.1.1 Based on the go-kart manufacturer's and track designer's recommendations, each owner shall implement a program of maintenance, testing, and inspection providing for the duties and responsibilities necessary to care for the concession go-karts, track safety equipment, the pit area, and track facilities. This program of maintenance shall include a checklist to be made available to each person performing the regularly scheduled maintenance on each go-kart. The owner's checklist shall include, but not be limited to, the following:

(1) Description of preventive maintenance assignments to be performed;

(2) Description of inspections to be performed;

(3) Special safety instructions where applicable; and,

(4) Any additional recommendations of the owner.

7.5 Inspection documents deemed appropriate by the owner to be maintained in the go-kart file shall be filed in accordance with the procedures outlined in Practices F 770 and F 1193.

7.6 Concession go-kart owner shall maintain brake and throttle markings so they are clearly visible. In the event markings are not provided by the manufacturer, the owner shall provide visible markings on the body or the chassis of the concession go-kart, or by marking the throttle green and the brake control red.

7.7 Concession go-kart track attendants shall be positioned so that they can observe go-kart operations and reach any section of the concession go-kart track immediately.

7.8 Concession go-kart attendants shall verify that drivers and passengers are secured properly in provided restraint devices consistent with go-kart manufacturer's specifications prior to authorizing go-kart operations to commence.

7.9 A signaling system or procedure shall be provided to alert or warn drivers of hazardous or caution situations while go-karts are operating.

7.10 Concession go-kart track attendants shall guide the actions of drivers, or passengers, or both, exiting the go-karts, or pit area, or both, in a manner consistent with safe operational procedures.

7.11 Verbal instructions, concerning concession go-kart ride rules, shall be announced to drivers and passengers prior to each ride cycle. Pre-ride instructions may include, but not be limited to, the required position of hands and feet; instructions defining the brake and throttle; and, other instructions the concession go-kart owner or attendants deem appropriate.

7.11.1 Concession go-kart attendants shall instruct all go-kart drivers of the instituted signaling systems or procedures, which alert or warn drivers of hazardous or caution situations while go-kart facilities are in operation.

7.12 Passengers in two seat concession go-karts shall be accompanied by a driver consistent with the minimum specifications for driver height or age established by the go-kart manufacturer.

7.13 Smoking shall not be permitted while operating a go-kart while in the pit or fueling area of the concession go-kart track.

7.14 Concession go-kart track attendants shall be identifiable to patron drivers and passengers.

7.15 Passengers shall not be permitted in go-karts that are designed for only one occupant.

7.16 Concession go-kart track surfaces shall be maintained in good repair, and free of cracks, obstructions, or potholes, or a combination thereof, of greater than ¾ in. in vertical change within a 1-in. horizontal distance, that could damage the go-kart or cause the driver to lose control of the go-kart.

7.17 *Patron Responsibility*:

7.17.1 There are inherent risks in the participation in or on any amusement ride, device, or attraction. Patrons of an amusement ride, device, or attraction by participation, accept the risks inherent in such participation of which the ordinary prudent person is or should be aware. Patrons have a duty to exercise good judgment and act in a responsible manner while using the amusement ride, device, or attraction and to obey all oral or written warnings, or both, prior to or during participation, or both.

7.17.2 Patrons have a duty not to participate in or on any amusement ride, device, or attraction when under the influence of drugs or alcohol.

7.17.3 Patrons have a duty to properly use all ride or device safety equipment provided.

8. Keywords

8.1 concession go-karts; go-karts

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